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24 January 1958

MEMORANDUM FOR: Project Director

SUBJECT: Study of Soviet Air Defense Capability Against High Flying Aircraft

REFERENCE: SAPC 22481, dated 23 December 1957
TS 164825, dated 2 January 1958

1. The enclosure to the first reference is being returned herewith. It appears from informal discussions between the Project Intelligence Section and various air defense analysts and/or intelligence officers from the Army, Navy, Air Force, ATIC and SAC that the attached paper (TS 164825) best states the average estimates of the combined opinions of the above offices. The greatest area of disagreement is in the surface-to-air missile (SAM) field. The latest national estimate dated March 1957 gives the Soviets a static missile defense capability to carry a 600 or 700 pound payload to 60,000 feet within a 25 mile horizontal radius of action and at a probable speed of mach 2. Its guidance system is probably the command type with a CEP at maximum range of about 190 feet or possibly a command and semi-active seeker with a CEP of about 50 feet. Although this national estimate has not officially been revised, it is the general feeling of the community that it should be. It is believed that AQUATONE operations during the summer of 1956 may have provided the Soviets with an incentive to embark on a program for production of an improved missile (70,000 to 90,000 feet, depending upon who is doing the estimating). A small number of such missiles could have been available in August of 1957 at the earliest. It is believed, however, that the Russians could have no more than about 20 of these missiles at this particular time, but it is expected that they could have these improved missiles of sufficient quantity (100) to put up an adequate defense of selected areas by the summer of 1958. This estimate of quantity is apparently the intelligence community's reason for stating that the Moscow SAM would not present a serious threat to operations before the middle or close of 1958.

2. As for the manned interceptor problem, the community is presently in agreement that there are three new model fighters undergoing testing and/or production, any one or combination of which are expected to be deployed to operational Soviet units by the middle of 1958. These fighters have sacrificed altitude capability be decreasing wing area with its consequent

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high wing loading factor in order to gain higher supersonic speeds (mach 2 at 35,000). It is estimated that all three of the above mentioned fighters would have a zoom capability up to 70,000 feet. The problems of shooting down a plane while in a zoom have been discussed in the attached paper and reflect accurately the informal views of the intelligence community. I believe it is important to emphasize that the Soviet problem is made considerably easier when several interceptors utilize the zoom technique and act as a coordinated team as would be possible during the latter half of 1958 if and when their new fighters are deployed in number.

3. With reference to the SAM problem, it should be noted that although ATIC's official estimate of the SAM capability is 70,000 to 90,000 feet, 25X1A [redacted] 25X1A of OSI advises that the technical analysts of OSI and ATIC are in agreement as to the engineering problems inherent in the development of a missile with such a capability and have, therefore, given the missile a capability as expressed in reference 2. It would appear that the official ATIC estimate is less a reflection of the technical analysts' evaluation than it is a compromise figure acceptable to ATIC for official publication, and indicating an understandable reluctance on their part to underestimate the Soviet capability.

25X1A [redacted]

Director of Operations

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CIA/RR IP-570
TS 164825 copy 5
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